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MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
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For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM FOR EXPRESSION OF GENES IN PLANTS

(57) Abstract: The present invention provides traps-complementation systems for expressing gene products in plants. In general, the invention provides systems including a carrier vector and a producer vector, both based on plant viruses. The producer vector is defective for at least one function needed for successful systemic infection of a plant, e.g., replication, cell-to-cell movement, or long distance movement. The carrier vector supplies the missing function in traps. Certain producer vectors lack a functional coat protein coding sequence, in which case the corresponding producer vector supplies coat protein in traps. The invention also provides novel plant viral vectors and methods of use, e.g., to produce polypeptides or active RNAs in plants.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/03169

| A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : C12N 5/04, 5/10, 5/00, 15/86, 15/82 US CL : 435/419, 440, 456, 457, 468 According to International Patent Classification (IPC) or to both national classification and IPC | | |
|--|--|---|
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 435/419, 440, 456, 457, 468 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X --- A | US 5,939,541 (VANCE et al.) 17 August 1999 (17.08.1999), see examples 17-18 and column 2. | 1, 2, 5-17, 19, 25, 26, 28, 29, 39, 40, 46-52, 66-69, 70, 71, 78, 79 ----- 3, 4, 18, 20-24, 27, 30- 38, 41-45, 53-60, 63- 65, 68, 72, 73, 75-77, 80-81 |
| X,P --- A | US 2003/0135822 A1 (METZLAFF et al) 17 July 2003 (17.07.2003), para [0025]. | 1 ----- 2-60, 63-66, 68-81 |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex. | | |
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| "O" document referring to an oral disclosure, use, exhibition or other means | "&" document member of the same patent family | |
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| Date of the actual completion of the international search 07 March 2005 (07.03.2005) | Date of mailing of the international search report 28 MAR 2005 | |
| Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230 | Authorized officer <i>Janet Shuman Lee</i> Konstantina Katcheves Telephone No. (703) 305-3388 | |

INTERNATIONAL SEARCH REPORT

International application No.
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Continuation of B. FIELDS SEARCHED Item 3:
EAST(ppgpub, uspat, epo, jpo, derwent), STN
virus, viral, vectors, coinfection, without or lack\$ or defective, coat protein

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/03169

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 61,62 and 67
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
recited sequence positions with no related SEQ ID NOs and thus were unsearchable.
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.